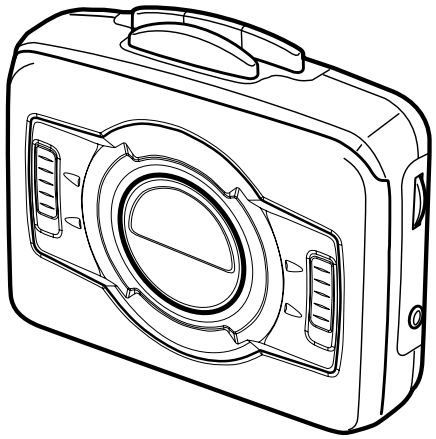
aiwa SERVICE

HS-PS301 Y,YH
HS-EM40MK3 Y



SERVICE MANUAL

STEREO CASSETTE PLAYER BASIC TAPE MECHANISM : 4ZM-2 P3NC2

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-001-427-3T1).

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S/M Code No. 09-003-427-3R1

REVISION DATA

SPECIFICATIONS

Maximum output: 4 mW + 4 mW (EIAJ 16 ohm) <Y>
15 mW + 15 mW (EIAJ 32 ohm) <YH>

Power source: DC 3 V using two R6 (size AA) batteries
AC house current using the optional AC adaptor Aiwa AC-D302

Maximum dimensions: 116.4 (W) x 92 (H) x 34.9 (D) mm
($4^5/_8$ x $3^5/_8$ x $1^3/_8$ in.)

Weight: Approx.114.2 g (4 oz) (excluding batteries)

• Design and specifications are subject to change without notice.

• Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

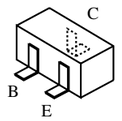
ACCESSORIES / PACKAGE LIST

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-HK9-903-010		IB,Y(EGFSI)C-PS301<301Y>
1	8A-HK9-904-010		IB,Y(EDPOHCZ)C-PS301<301Y>
1	8A-HK9-905-010		IB,YH(ECC)-C<301YH>
1	8A-HK9-906-010		IB,Y(EGFSI)C-EM40MK3<40Y>
1	8A-HK9-907-010		IB,Y(EDPOHCZ)C-EM40MK3<40Y>
2	84-447-019-310		CLIP,BELT
3	87-B30-168-210		HEADPHONE,HP-M006(K)<301YH,301Y,[S]40Y>
3	87-B30-155-210		HEADPHONE,HP-M006 BL(T)<[LM]40Y>
3	87-B30-156-210		HEADPHONE,HP-M006 G(T)<[GM]40Y>

ELECTRICAL MAIN PARTS LIST

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
IC			
	87-A21-638-040		IC,MM1336CF
	87-017-805-080		IC,AN7375NS(OP AMP)
TRANSISTOR			
	87-026-264-080		C-TR,RN1411
DIODE			
	87-020-027-080		C-DIODE, 1SS184
	87-A40-630-040		C-DIODE, RB411D<YH>
MAIN C.B			
C1	87-010-181-080		CAP,CHIP S 1800P
C2	87-010-181-080		CAP,CHIP S 1800P
C3	87-010-178-080		CHIP CAP 1000P
C4	87-010-178-080		CHIP CAP 1000P
C5	87-015-676-040		E/CAP 47/6.3
C6	87-015-676-040		E/CAP 47/6.3
C7	87-015-676-040		E/CAP 47/6.3
C8	87-010-196-080		CHIP CAPACITOR,0.1-25
C9	87-010-213-080		C-CAP,S 0.015-50 B
C10	87-010-213-080		C-CAP,S 0.015-50 B
C11	87-016-462-080		C-CAP,S 1-16 F
C12	87-010-194-080		CAP, CHIP 0.047
C13	87-015-681-040		E/CAP 10-16
C14	87-010-196-080		CHIP CAPACITOR,0.1-25
C15	87-016-462-080		C-CAP,S 1-16 F
C16	87-016-462-080		C-CAP,S 1-16 F
C17	87-010-180-080		C-CER 1500P
C18	87-010-180-080		C-CER 1500P
C20	87-A10-489-040		CAP,E 220-4 7L SR
C21	87-A10-489-040		CAP,E 220-4 7L SR
C22	87-016-462-080		C-CAP,S 1-16 F
C23	87-010-197-080		CAP, CHIP 0.01 DM
C24	87-010-197-080		CAP, CHIP 0.01 DM
C25	87-016-462-080		C-CAP,S 1-16 F
C26	87-016-462-080		C-CAP,S 1-16 F
C51	87-010-178-080		CHIP CAP 1000P
C52	87-010-196-080		CHIP CAPACITOR,0.1-25
C53	87-016-462-080		C-CAP,S 1-16 F
C54	87-A10-489-040		CAP,E 220-4 7L SR
C351	87-016-461-080		C-CAP,S 0.47-16F
C352	87-016-461-080		C-CAP,S 0.47-16F
C353	87-010-196-080		CHIP CAPACITOR,0.1-25
C354	87-010-196-080		CHIP CAPACITOR,0.1-25
C355	87-010-186-080		CAP,CHIP 4700P
C356	87-010-186-080		CAP,CHIP 4700P
C357	87-010-193-080		CHIP CAPACITOR,0.033
C358	87-010-193-080		CHIP CAPACITOR,0.033
C359	87-010-186-080		CAP,CHIP 4700P
C360	87-010-186-080		CAP,CHIP 4700P
C361	87-016-462-080		C-CAP,S 1-16 F
C362	87-016-462-080		C-CAP,S 1-16 F
C363	87-016-462-080		C-CAP,S 1-16 F
C364	87-016-462-080		C-CAP,S 1-16 F
C365	87-015-676-040		E/CAP 47/6.3
C367	87-010-188-080		CAP,CHIP 6800P
C368	87-010-188-080		CAP,CHIP 6800P
J1	85-HRL-623-010		JACK,3.5 ST BLK
J2	87-A61-124-010		JACK,DC DIA2.75 BLK TC<YH>
R54	87-022-657-080		RES,K34G 0.68
SFR1	87-A90-789-080		C-SFR,470 RH03AXA12X
SFR2	87-A90-789-080		C-SFR,470 RH03AXA12X
SFR51	87-024-197-010		SEMI-FIXED RESISTOR, 1K
SW1	87-A90-133-110		SW,LEAF LSA1120JAU
SW2	87-A91-163-010		C-SW,SL 1-1-2 4MM
TH51	87-026-256-090		THERMISTOR, HT-100
VR1	87-A91-724-010		VR,RTRY 20KAX2
FRONT C.B			
C401	87-012-141-080		C-CAP,S 0.22-16 Z F C2012
C402	87-012-141-080		C-CAP,S 0.22-16 Z F C2012
SW351	87-036-304-080		C-SW,SL 1-1-2 SS-350
SW401	87-A90-330-080		C-SW,SL 1-1-2 SSSS81 T1.4

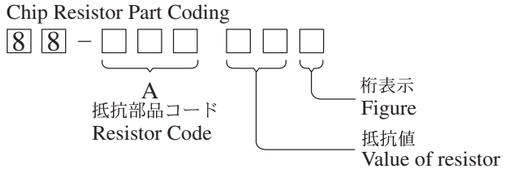
TRANSISTOR ILLUSTRATION



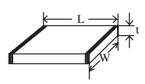
RN1411

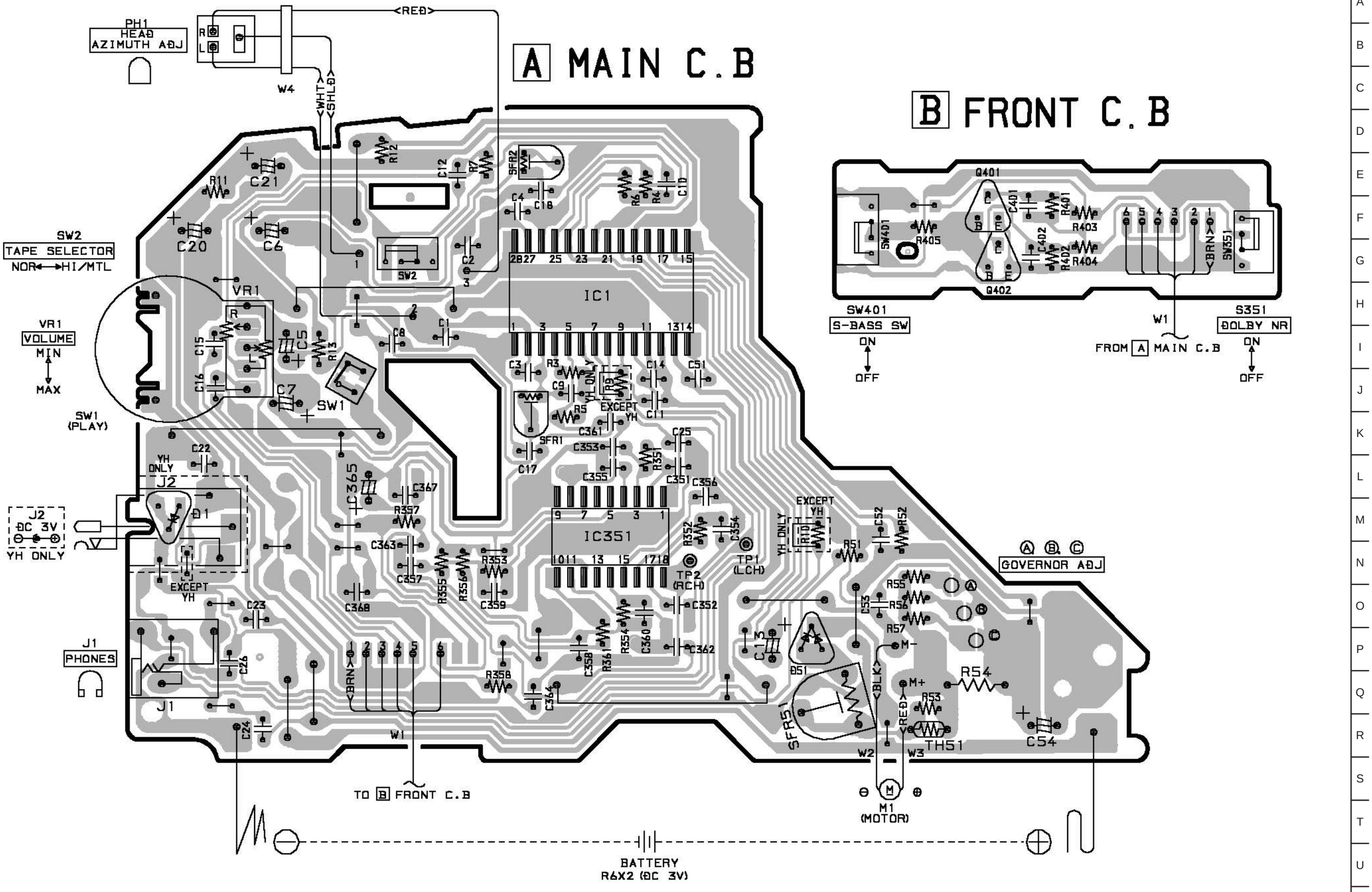
○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

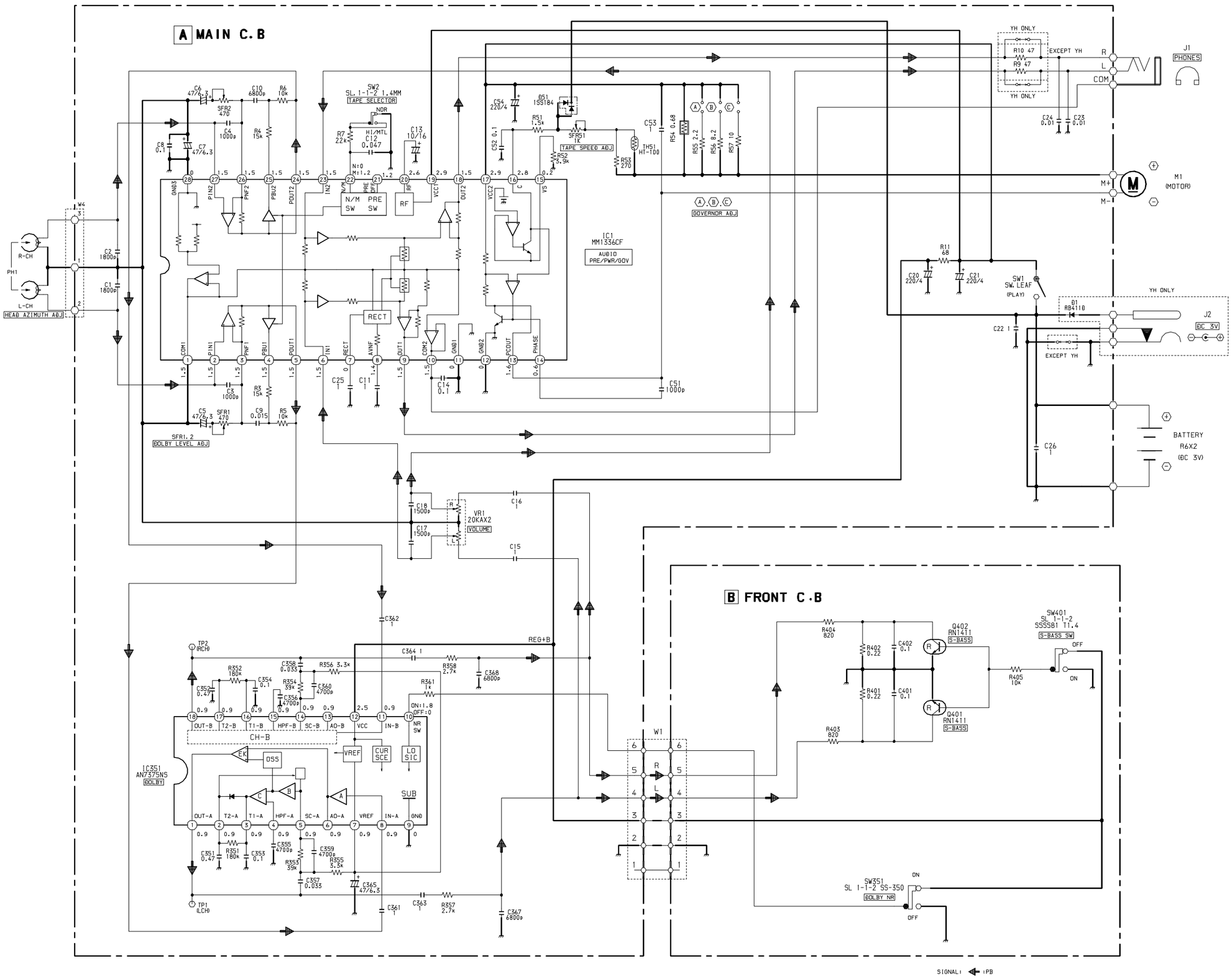


チップ抵抗
Chip resistor

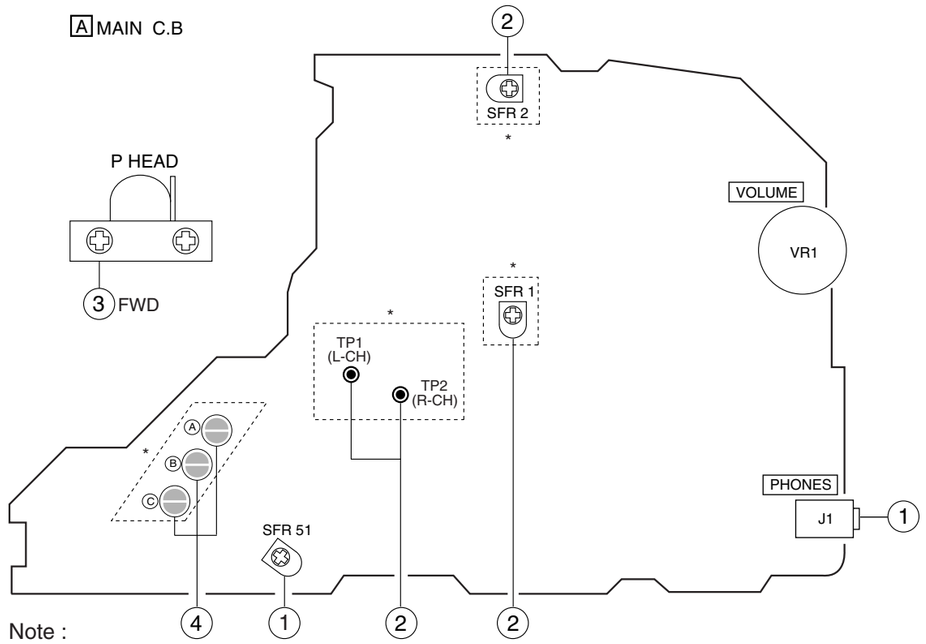
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	±5%	CJ		1.0	0.5	0.35	104
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128


A MAIN C.B
B FRONT C.B
PH1
HEAD
AZIMUTH ADJ
R
L
W4
<RED>
<WHT>
<SHLD>
SW2
TAPE SELECTOR
NOR←→HI/MTL
VR1
VOLUME
MIN
MAX
SW1
(PLAY)
J2
DC 3V
YH ONLY
EXCEPT
YH
J1
PHONES
IC1
IC351
IC365
SFR1
SFR2
SFR51
TP1
(LCH)
TP2
(RCH)
TH51
M1
(MOTOR)
W1
TO B FRONT C.B
W2
W3
A B C
GOVERNOR ADJ
BATTERY
R6X2 (DC 3V)
Q401
Q402
SW401
S-BASS SW
ON
OFF
S351
DOLBY NR
FROM A MAIN C.B
<BRN>
<BLK>
<RED>

SCHEMATIC DIAGRAM



ADJUSTMENT



1. Tape Speed Adjustment
   Settings : • Test tape : TTA – 100 (Tape center)
   • Test point : Phones Jack (J1)
   • Adjustment location : SFR51
   • Tape selector : NORM
   • Volume : Non – clip (MAX – 10 dB down)
   Method : Play back the test tape and adjust SFR51 so that the frequency becomes 3000 Hz ± 10 Hz. Then confirm WOW is less than 0.52%.

2. Dolby Level Adjustment
   Settings : • Test tape : TTA – 200
   • Test point : TP1 (L – CH) TP2 (R – CH)
   • Adjustment location : SFR1 (LCH) SFR2 (RCH)
   • Dolby NR : OFF
   • Tape selector : NORM
   Method : Play back (FWD) the test tape and adjust SFRs so that the test point becomes 100 mV ± 1 dB.

3. Head Azimuth Adjustment
   Setting : • Test tape : TTA – 330 / TTA – 420
   • Volume : MAX
   • Tape selector : NORM
   • Adjustment location : Head azimuth adjustment screw
   Method : Play back (FWD) the test tape and adjust screw so that the 8 kHz signal output is maximum.

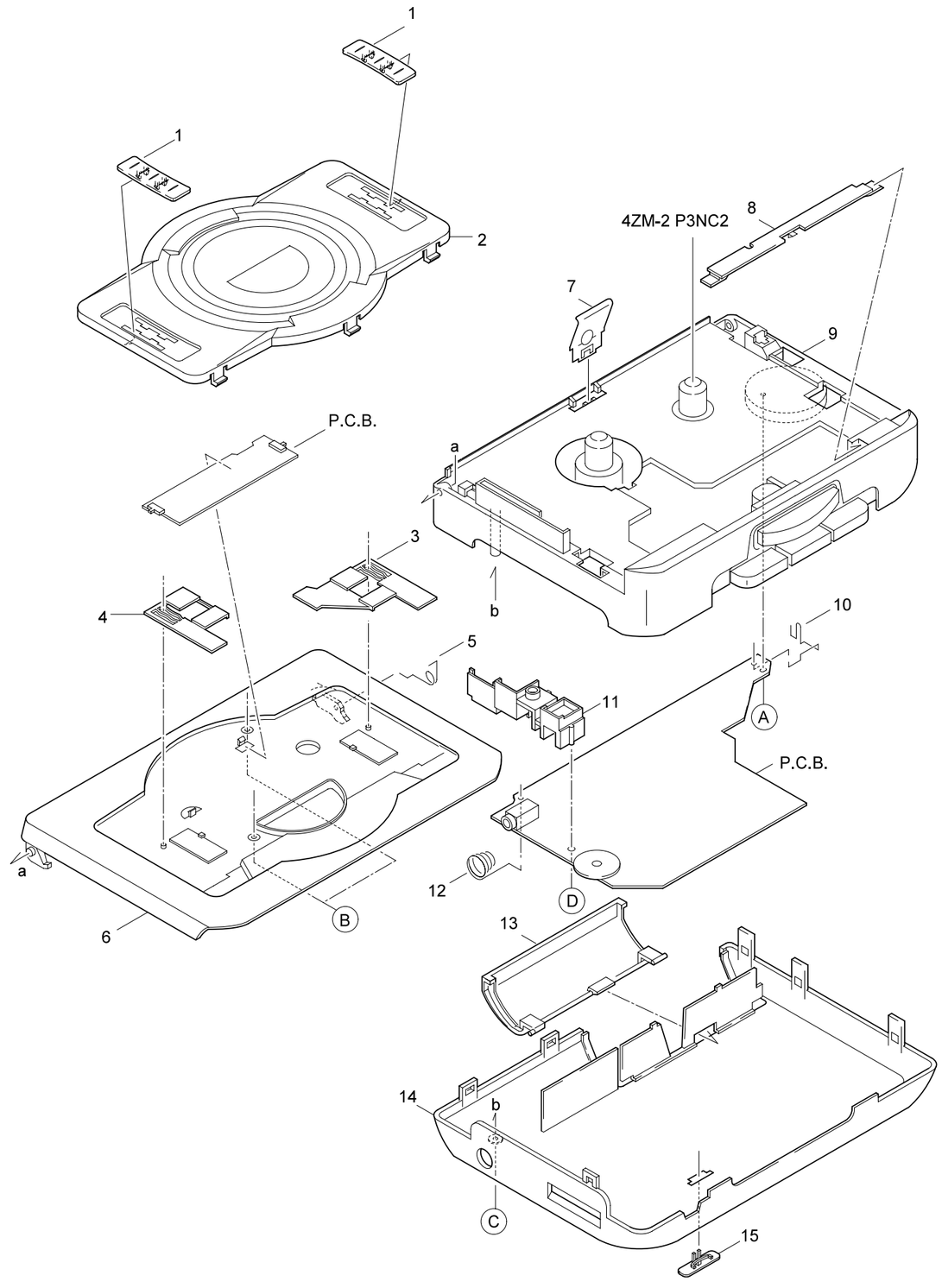
4. GOVERNER Check
   Perform the STOP —> PLAY and REVERSE operations (or PAUSE ON —> OFF) after the motor is replaced. When the tape starts running smooth, this adjustment is not necessary. If wow is conspicuous at the beginning of the tape-run, perform this adjustment following the procedures below.
   1) Solder resistor pattern (A) of the MOTOR AND GOVERNOR MATCHING ADJ. resistor group.
   2) Set the tape speed (using speed adjustment SFR51).
   3) Restrict the motor rotation by hand (or turn PAUSE ON).
   4) Remove your hand and listen to the beginning of the tape-run.
   5) When the rise of tape running is smooth, no more adjustment is necessary.
      If wow continues for 1 to 2 seconds at the rise time, change the combined resistance according to procedure 6 and check that the tape starts running smooth.
   6) Solder the resistor pattern according to the table below

Pattern	Low resistance Ⓐ	Medium resistance Ⓑ	High resistance Ⓒ
Step (1)	Open	Open	Open
Step (2)	Open	Open	Solder
Step (3)	Open	Solder	Open
Step (4)	Open	Solder	Solder
Step (5)	Solder	Open	Open
Step (6)	Solder	Open	Solder
Step (7)	Solder	Solder	Open

(NOTE : Ⓐ = 2.2 ohm, Ⓑ = 8.2 ohm , Ⓒ = 10 ohm)

   7) Finally re-check the tape speed.
      Caution : Cool the patterns down to normal temperature after soldering. If the pattern remains heated, the gorvernor circuit does not operate normally.

MECHANICAL EXPLODED VIEW 1 / 1



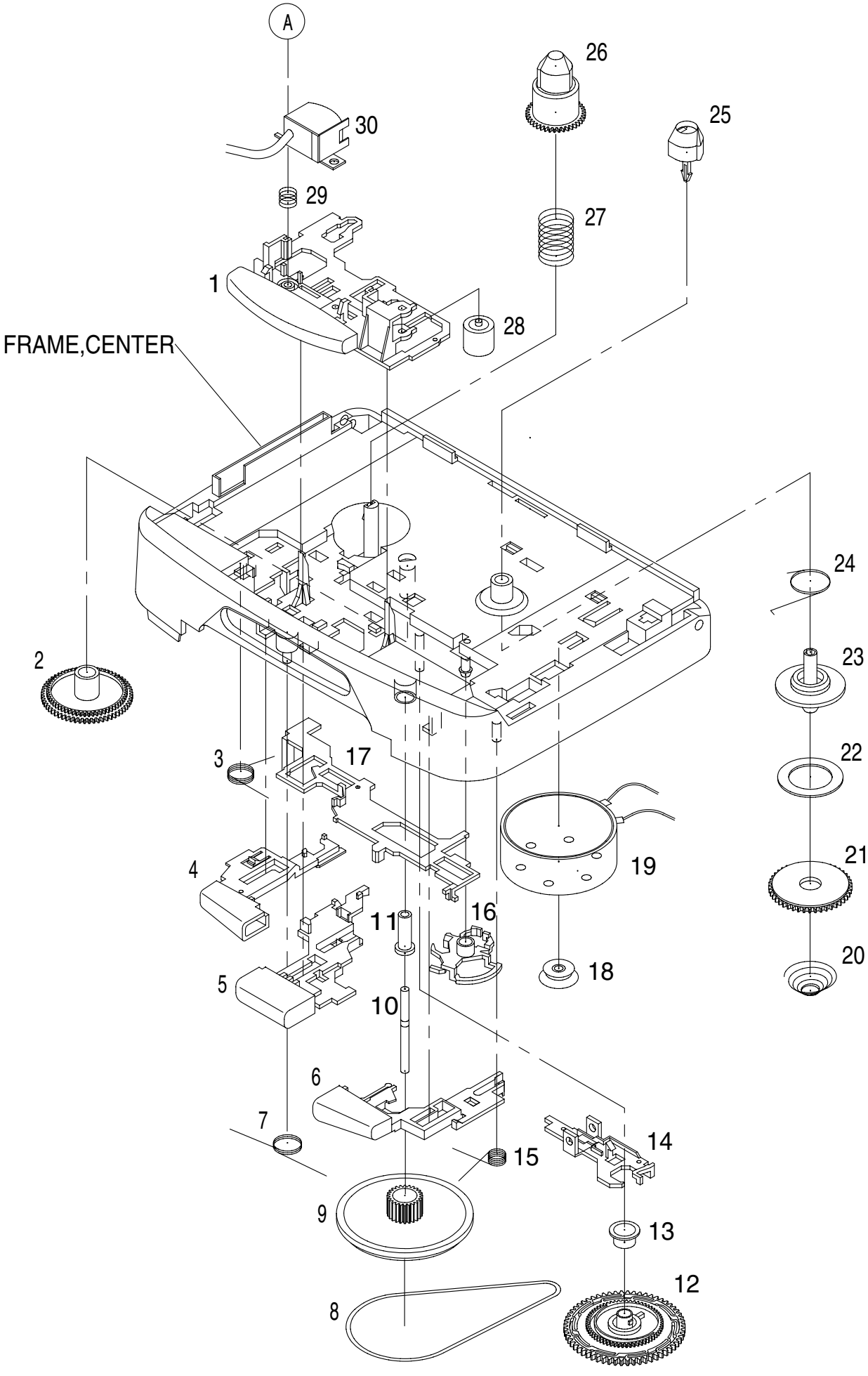
MECHANICAL PARTS LIST 1 / 1

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-HGA-005-010		KNOB,SL DOLBY
2	8A-HK9-002-010		PANEL,CASS
3	8A-HK9-003-010		PLATE,IND SBASS
4	8A-HGA-006-010		PLATE,IND DOLBY
5	86-HRM-205-010		SPR-T,CLICK
6	8A-HK9-001-010		LID,CASS<[S]301Y,[S]301YH>
6	8A-HK9-004-010		LID,CASS EM40<[S]40Y>
6	8A-HK9-005-010		LID,CASS EM40 MBLU<[LM]40Y>
6	8A-HK9-006-010		LID,CASS EM40 MGRE<[GM]40Y>
7	8A-HRL-202-010		SPR-P,CASS
8	87-HRR-206-010		PLATE,HEAD J034N<[S]301Y,[S]301YH,[S]40Y>
8	88-HKB-204-010		PLATE,HEAD J266G<[GM]40Y>
8	88-HKB-205-010		PLATE,HEAD V10<[LM]40Y>
9	88-HKA-029-010		FRAME,CENTER GRE<[GM]40Y>
9	88-HRJ-038-010		FRAME,CENTER J034N<[S]301Y,[S]301YH,[S]40Y>
9	88-HKA-027-010		FRAME,CENTER V10<[LM]40Y>
10	86-HKA-202-010		BAT-CONTACT,(+)
11	8Z-HG8-202-010		HLDR,DC JACK
12	8Z-HG8-203-010		BAT,CONTACT(-)
13	88-HG8-020-010		LID,BATT J-129G<[GM]40Y>
13	88-HG8-025-010		LID,BATT J-224B<[LM]40Y>
13	8Z-HG8-018-010		LID,BATT J049N<[S]301Y,[S]301YH,[S]40Y>
14	8A-HK9-007-010		CABI,REAR YZ<[S]301Y,[S]301YH,[S]40Y>
14	8A-HK9-008-010		CABI,REAR YZ MBLU<[LM]40Y>
14	8A-HK9-009-010		CABI,REAR YZ MGRE<[GM]40Y>
15	8Z-HGA-018-010		KNOB,SL DOLBY J129G<[GM]40Y>
15	8Z-HGA-017-010		KNOB,SL DOLBY J224B<[LM]40Y>
15	8Z-HGA-013-010		KNOB,SL TAPE J<[S]301Y,[S]301YH,[S]40Y>
A	87-264-525-310		SCREW, V+1.7-2.5
B	87-067-732-010		TAPPING SCREW, VT1.4-3
C	87-067-691-010		SCREW VT+1.7-6
D	87-067-384-010		SCREWVT1.4-3.5HL

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange		

TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZM2-012-010		LEVER,PLAY G
2	84-ZM2-211-01K		GEAR,CONNECT
3	84-ZM2-222-010		SPR-T,PLAY
4	84-ZM2-015-010		LEVER,STOP G
5	84-ZM2-014-010		LEVER,REW G
6	84-ZM2-013-010		LEVER,FF G
7	84-ZM2-223-010		SPR-T,REW STOP
8	84-ZM2-232-010		BELT,MAIN
9	84-ZM2-221-010		FLY-WHL,P2
10	84-ZM2-230-010		CAPSTAN,P 1.8-25
11	84-ZM2-220-01K		BRG,P
12	84-ZM2-210-01K		GEAR,AUTO
13	84-ZM2-218-01K		CAP,GEAR AUTO
14	84-ZM2-208-01K		LEVER,SHIFT
15	84-ZM2-224-010		SPR-T,FF LOCK
16	84-ZM2-207-01K		LEVER,AUTO
17	84-ZM2-206-01K		LEVER,LOCK
18	84-ZM2-219-01K		PULLEY,MOTOR
19	87-045-385-019		MOT (BCY3B11)
20	84-ZM2-226-010		SPR-C,CLUTCH
21	84-ZM2-212-01K		GEAR,CLUTCH
22	84-ZM2-231-019		FELT,CLUTCH
23	84-ZM2-217-01K		SHAFT,REEL
24	84-ZM2-225-010		SPR-T,AUTO FIND
25	84-ZM2-216-01K		REEL TABLE,R
26	84-ZM2-215-01K		REEL TABLE,L
27	84-ZM2-228-010		SPR-C,BT
28	84-ZM2-233-110		PINCH ROL ASSY
29	84-ZM2-227-010		SPR-C,AZIMUTH
30	87-A90-272-010		HEAD,PH MS25P ETH
A	84-ZM2-242-019		S-SCREW,AZIMUTH-2-5.9

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